

AMENDMENTS TO THE CLAIMS

1. (Withdraw – Currently Amended) A lock cylinder comprising:
 - an outer cylinder having a first bore formed along a first longitudinal axis;
 - an inner cylinder rotatably disposed within said first bore;
 - a plurality of pin assembly assemblies disposed within said inner and outer cylinders, said plurality of pin assembly assemblies being operable to selectively lock said inner cylinder relative to said outer cylinder, each of said plurality of pin assembly assemblies comprising:
 - an upper shear cylinder positionable relative to said outer cylinder;
 - a lower shear cylinder positionable relative to said inner cylinder, said upper and lower shear cylinders movable to define a first shear line therebetween;
 - an upper pin slidable within said upper shear cylinder; and
 - a lower pin slidable within said lower shear cylinder, said upper and lower pins defining a second shear line therebetween at a shear interface;
 - wherein the lock cylinder is positionable from a locked position to an unlocked position when said first shear line is aligned with said second shear line, the plurality of shear interfaces cooperating to define an irregular shear interface between the inner and outer cylinders.

2-15. (Withdrawn)

16. (Withdrawn – Currently Amended) A lock cylinder comprising:

an outer cylinder having a first bore formed along a first longitudinal axis;

an inner cylinder rotatably disposed within said first bore;

a an irregular shear zone defined between said outer and inner cylinders;

~~a lock assembly plurality of pin assemblies~~ disposed within said inner and outer cylinders, ~~said lock assembly plurality of pin assemblies~~ operable to selectively lock said inner cylinder relative to said outer cylinder, each of said plurality of pin assembly assemblies comprising:

an upper shear cylinder positionable relative to said outer cylinder;

a lower shear cylinder positionable relative to said inner cylinder, said upper and lower shear cylinders movable to define a first shear line therebetween; and

an upper lock rack, said upper lock rack operable to lock said upper shear cylinder in a plurality of positions relative to said outer cylinder; and

a lower lock rack, said lower lock rack operable to lock said lower shear cylinder in a plurality of positions relative to said inner cylinder;

wherein said upper and lower lock racks lock said upper and lower shear cylinders relative to said inner and outer cylinders to maintain said first shear

line within said shear zone, said inner cylinder being movable relative to said outer cylinder when the plurality of shear lines lie within the shear zone.

17-26. (Withdrawn)

27. (Currently Amended) A method of re-keying a lock cylinder comprising:

inserting a first key into said lock cylinder, said first key operable to allow rotation of an inner cylinder relative an outer cylinder;

providing a lock assembly having a longitudinal axis, the lock assembly being operable to lock said inner cylinder to said outer cylinder and including a plurality of pin assemblies, each of the plurality of pin assemblies including an upper pin, upper shear cylinder, lower pin, and lower shear cylinder, the upper and lower pins and the upper and lower shear cylinders of each of the plurality of pin assemblies cooperating to define a shear interface, at least one of the plurality of shear interfaces being disposed at a different transverse distance relative to the remaining shear interfaces said lock assembly operable to lock said inner cylinder to said outer cylinder;

translating a first lock pin within said upper shear cylinder and out of engagement with a lower an upper lock rack;

engaging said upper first lock pin with said upper shear cylinder and said upper pin;

translating a second lock pin within said lower shear cylinder and out of engagement with a lower lock rack;

engaging said lower second lock pin with said lower shear cylinder and said lower pin;

removing said first key;

providing a force to said upper shear cylinder, said force operable to set said upper and lower shear cylinders in a first position relative said upper and lower lock racks;

inserting a second key into said lock cylinder, said second key including an engagement surface operable to engage said second pin;

positioning said upper shear cylinder, upper pin, lower shear cylinder, and lower pin relative said upper and lower lock racks via said second key;

disengaging said upper lock pin from said upper pin;

engaging said upper first lock pin with said upper lock rack and said upper shear cylinder;

disengaging said lower second lock pin from said lower pin;

engaging said lower second lock pin with said lower lock rack and said lower shear cylinder.

28. (Cancel)

29. (Original) The method according to claim 27 wherein said force is applied by a spring.

30. (Withdrawn – Currently Amended) A method of re-keying a lock cylinder comprising:

providing a lock cylinder having a cylinder body, a plug body, and a plurality of pin positions, each pin position having a longitudinal axis and a shear interface movable along the longitudinal axis, each of the plurality of shear interfaces being operatively disposed at different transverse distances from the longitudinal axis to unlock the lock cylinder;

inserting a first valid key in the cylinder to move each shear interface along its respective longitudinal axis;

rotating the lock cylinder from a home position to a learn position;

replacing the first valid key with a second valid key;

rotating the lock cylinder back to the home position; and

removing the second valid key.

31. (Withdrawn – Currently Amended) A lock cylinder comprising:
a cylinder body and a plug body rotatable therein; and
a plurality of pin positions, each pin position having a longitudinal axis and a shear interface movable along the longitudinal axis, the plurality of shear interfaces cooperating to define an irregular shear zone between the cylinder body and the plug body.